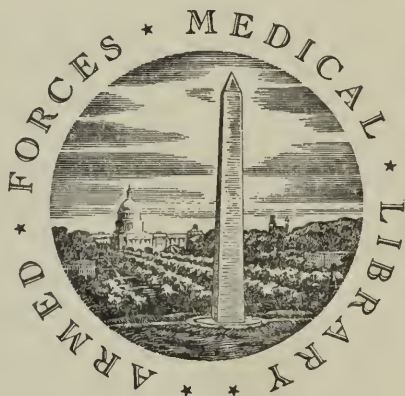




UNITED STATES OF AMERICA



FOUNDED 1836

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WASHINGTON, D.C.





# AN ESSAY

ON THE

## *Hydrocephalic State Of Fever.*

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BY THOMAS ROWAN,

OF SALEM, NEW JERSEY,

HONORARY MEMBER OF THE PHILADELPHIA MEDICAL AND CHEMICAL  
SOCIETIES.

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*In mercy spare us when we do our best,*

*To make as much waste paper as the rest.*

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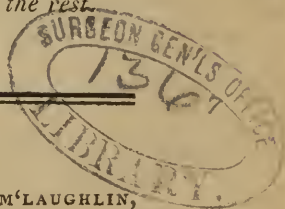
PHILADELPHIA :

PRINTED FOR THE AUTHOR, BY W. F. M'LAUGHLIN,

NO. 34, CARTER'S ALLEY.

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1802.





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AN  
INAUGURAL DISSERTATION

FOR

THE DEGREE

OF

DOCTOR OF MEDICINE,

SUBMITTED TO THE EXAMINATION

OF THE

REVEREND JOHN EWING, S. S. T. P. PROVOST;

THE

TRUSTEES & MEDICAL FACULTY

OF THE

UNIVERSITY OF PENNSYLVANIA,

ON THE 27th DAY OF MAY, 1802.





BENJAMIN RUSH, M. D.

*Professor of the Institutes of Medicine, and Clinical  
Practice.*

IN THE

UNIVERSITY OF PENNSYLVANIA.

MUCH RESPECTED SIR,

**DISINTERESTED** acts of friendship carry their reward within themselves. I cannot, therefore, expect to add to the satisfaction you have experienced from the exercise of your natural propensity, by dedicating to you this imperfect performance.

Governed, however, by sentiments more readily conceived than expressed, I consider it a duty incumbent on me, to offer you this small tribute of gratitude and esteem (the only one in my power to give) for the many favours received at your hands. And that you may enjoy that health which is necessary to the prosecution of those labours so essential to the happiness of mankind, is the fervent wish of

Your very affectionate

Friend and Pupil,

**THE AUTHOR.**



## PREFACE.

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IT is with diffidence that I now come forward to appear before the public in the character of an author, but such is the rule of this university, that it is always required of those in similar situations; and is at the present not to be dispensed with.

A consciousness of my inability to this arduous undertaking, and the small experience I have had since the commencement of my studies, together with other pursuits equally unfavorable to facility in composition, caused emotions in my mind not easily to be surmounted.

Relying, therefore, upon the candor of my readers, I shall, in as laconic and satisfactory a manner as my time and abilities will admit, proceed to deliver a few observations on the cause, symptoms, and method of cure of the Hydrocephalus Internus.

To attempt a definition of a disease, on which so many illustrious characters have already enter-

ed, and failed, may in my extreme youth and inexperience, be deemed presumptuous; for with regard to the history of diseases, whoever considers the undertaking deliberately, must be fully persuaded of the disadvantages that an early publication must labour under.

False theories in medicine, without the smallest shadow of reason, in the place of theories well established on a foundation of facts, have hitherto much prevailed; many of the writings of physicians are founded on hypothesis, and the result of a luxurious imagination. In contemplating this, the candid reader will not censure an unexperienced student, should he attempt an investigation of the present disease by a few speculative arguments.

## INAUGURAL DISSERTATION, &amp;c.



## THE HISTORY OF THE DISEASE.

I SHALL begin by delivering a few general propositions.

1st. The internal Dropsy of the Brain is a disease confined chiefly to children. They are subject to this complaint at all ages\*. Dr. Rush tells us that he has seen it in a child of six weeks old; though it generally affects those between two and nine years of age. Nevertheless it sometimes affects adults. I have seen it in two.

2ndly. In children the brain is larger in proportion to other parts of the body, than it is in adults; consequently a greater proportion of blood is immitted to it in childhood than in the subse-

\* Vide Lond. Med. Obs. and Ing. vol. vi. p. 58...vol. iv. p. 86...Med. Communications, vol. i. p. 404....Med. Comment. vol. ix. p. 240...Quin p. 26...Fothergill, octavo edition, vol. ii. p. 74.

quent periods of life. The effects of this determination of blood to the brain appear in the mucous discharge from the nose, and in the sores on the head and behind the ears, which are so common in childhood.

3dly. In all febrile diseases there is a preternatural determination of blood to the brain. This occurs, in a more especial manner, in children; hence the reason why they are so frequently affected with convulsions in the eruptive fever of the small-pox, in dentition, in the diseases from worms, and in the first paroxysms of intermitting fevers.

4thly. In fevers of every kind, and in every stage of life, there is a disposition to effusion in that part to which there is the greatest determination. Thus, in inflammatory fevers, effusions take place in the lungs and in the joints. In the bilious fever, they occur in the liver; and in the gout, in every part of the body. The matter effused is always influenced by the structure of the part which is affected.

These propositions being premised, I proceed to enumerate the more prominent symptoms of this disease.

In the commencement or first stage, the patient is languid, inactive, often drowsy and peevish; but at intervals, cheerful and apparently free from complaint; the appetite is weak, nausea, and in many cases a vomiting occurs once or twice in a day; the skin is observed to be hot and dry towards the evening: shortly after the appearance of these symptoms, the patient is affected with an acute head-ach, chiefly in the fore part, if not there, generally in the crown of the head, which frequently affects the back of the neck and shoulders; sometimes it is confined to one side of the head, and in that case, when the posture of the body is erect, the head often inclines to the side affected. We also find, that the head-ach alternates with the affection of the stomach; that is, the vomiting being less troublesome when the pain is most violent, and vice versa; other parts of the body are likewise subject to temporary attacks of pain, viz. the extremities, and bowels; in all such cases the head is more free from uneasiness. The patient dislikes the light at this period; cries much, sleeps little; and when he does sleep, he grinds his teeth, picks his nose, appears to be uneasy, and starts often, screaming as if he were terrified. In the majority of cases the bowels are much confined, however it sometimes happens that they are in an opposite state: the pulse in

this early stage of the disease, does not usually indicate any material derangement.

When the symptoms above mentioned, have continued for a few days, (subject as they always are in this disease to great fluctuation,) the axis of one eye is generally found to be turned in towards the nose; the pupil of which eye is rather more dilated than the other; and when both eyes have the axis directed inwards, (which sometimes happens,) both pupils are larger than they are observed to be in the eyes of healthy persons: the vomiting becomes more constant, and the head-ach more excruciating; every symptom of fever then makes its appearance; exacerbations of the fever take place towards the evening, and the face is occasionally flushed; usually one cheek is much more affected than the other; temporary perspirations break forth, which are not followed by any alleviation of distress; a discharge of blood from the nose, which sometimes appears about this period, is equally inefficacious.

Delirium, and that of the most violent kind, particularly if the patient has arrived at the age of puberty, now takes place, and with all the preceeding symptoms of fever, it continues to increase, for about fourteen days,



These are the symptoms of the first stage, during which time it is very hard to distinguish this dropsy of the brain from a slow irregular fever occasioned by worms, or some other cause, as dentition, cholic, &c. in other cases the paroxysms the come on pretty regularly in the evening, and then disease is not unfrequently taken for a slow irregular nervous fever.

## SYMPTOMS OF THE SECOND STAGE.

I date the beginning of the second stage from the time the pulse, from being quick and regular, becomes slow and irregular, both as to its strength, and the intervals between the pulsations. This sometimes happens about a fortnight or three weeks before the death of the patient.

In one adult that I have seen in this disease, the pulse which for a long time beat above a hundred times in a minute; at the commencement of this stage, decreased to fifty, becoming the more irregular as it fell, but on the loss of blood increased in frequency and diminished in tension.

During the second stage, most of the symptoms mentioned in the first, continue; the pain of the head, or whatever part had been previously

affected, seems to abate, at least the patient becomes apparently less sensible of it. The sick are unable to sit up, they sleep but little, till towards the end of this period, when they begin to grow drowsy, moan heavily, yet cannot tell what ails them. The interrupted slumbers, or perpetual restlessness which prevailed during the earlier periods of the disease, are now succeeded by an almost lethargic torpor, they squint outwards, and sometimes they complain of seeing objects double: while the strabismus and dilatation of the pupil increase, the patient lies with one, or both eyes half closed, which, when minutely examined, are often found to be completely insensible to light; the vomiting ceases; whatever food or medicine is offered, is usually swallowed with apparent voracity; the bowels at this period generally remain obstinately costive. Some towards the end of this stage, become delirious, and cry out in a terrific manner, as if they were much frightened: about this time also, or later, they frequently void either real worms, or some substance like worms in a dissolved state; yet this discharge gives no relief to the patient, and only helps to deceive the less experienced practitioner with regard to the nature of the disease.

The urine in this, as well as in the other stages, varies; it has often a large sediment, some-

times none at all; but most commonly it deposits one of a light consistence and a white colour. In some the urine is observed to have large furfuraeous sediment, till within a few days of their death, when it has no separation.

The breath has now, but especially in the last stage, such an offensive smell, as is not observed in any other state of fever.

If every effort made by art fails to excite the sinking powers of life, the symptoms of what has been called the second stage, are soon succeeded by others, which more certainly announce the approach of death....The pulse again becomes equal, but so weak and quick, that it is almost impossible to count it; a difficulty of breathing, nearly resembling the stertor apoplectic, is often perceived, sometimes the eyes are suffused with blood, the flushing of the face is more frequent than before, but of shorter duration, and followed by a deadly paleness; petechia, red spots, or blotches, sometimes appear on the body and limbs; deglutition becomes difficult, and convulsions generally close the scene.

Physicians disagree in regard to the state of the pulse. Whytt says that in the beginning of the disease it is quick; Fothergill and Watson,

that it is no quicker than in health; while others say that it is preternaturally slow.

We may admit that these authors are correct in their observations on the pulse; knowing how capricious a viscus the brain is; and how eccentric the disease is in all its symptoms.

Dr. Rush says, he has not found the dilated and insensible pupil, the puking, the delirium, or the strabismus, to attend this disease invariably. That he has seen one case in which the appetite was unimpaired from the first to the last stage. Another case attended by blindness, another by double vision, three with hemiplegia, and in one case where he obtained a gill of water, from the ventricles of the brain of a girl nine years of age, who died of this disease; she did not complain of pain in her head, limbs, nor stomach, in any stage of it. The disease in this case was introduced suddenly by a pain in her breast, a fever, and the ordinary symptoms of a catarrh.

The same author has recorded three cases, the first upon the authority of Dr. Wistar, in which there was a total absence of pain in the head. The second upon the authority of Dr. Carson, in which a hydrophobia was produced. And the third upon the authority of Dr. Currie, who ob-

tained, by dissection, seven ounces of water from the brain of a child that died of this disease, in whom no dilatation of the pupil, strabismus, sickness, or loss of appetite had attended, and but very little head-ach.

This account of the disease can only be considered as a mere outline; we want many facts in addition to those of Whytt, Fothergill, Quin, Patterson, and Rush, in order to form an accurate history of the Hydrocephalus. The symptoms enumerated in the preceding pages occasionally occur, though none of them accompany the disease, invariably.

The facts, which have been mentioned, serve to shew that there are many deviations from the history of the disease which has been given by the ancients, and that it is indeed as Dr. Quin has happily expressed it, of “a truly proteiform” nature. Like the bilious remitting yellow-fever, it assumes a variety of shapes, each one in its turn liable to deceive the most skillful nosologist.

Upon opening the head after death, the water\*

\* Morgagni, Sauvages, Patterson, Haygarth, and others, supposed the effused matter was serum, but this is not the case, for it will not coagulate by heat, like the serum of the blood, or the lymph that is found in the pericardium, or what is taken from the abdomen by tapping in a dropsy; which experiments have been made by Dr. Woodhouse and Dr. Whytt.

is sometimes found between the cranium and dura mater, or between the dura and pia mater, but most frequently in the ventricles of the brain. The quantity of fluid contained in these cavities, is sometimes so great as almost to exceed belief. Whytt\* has found eight ounces, Bonetus† five pounds, Monroe‡ three pounds, Vesalius nine pounds, in the ventricles of the brain of a child two years old, Lieutaud thirteen pounds ; and Gustavus Hume relates a case where he opened the cranium and found ten pounds of limpid water. This last was a most extraordinary case of Hydrocephalus. There was not the smallest portion of brain, or least trace of the membranes, except opposite the orbits of the eyes, and near the meatus auditorius, where something like Medulla remained.

## OF THE DIAGNOSIS.

As it is of some consequence to distinguish this disease from others resembling it, I shall make the following remarks on the Diagnosis.

\* Whytt, p. 25.

† Bonetus Sepulch. Anat. Lib. Sect. 2d. Ob. 45. v. 1.

‡ Monroe on the Dropsy, p. 154.



Having given an account of all the various symptoms commonly attending a collection of water in the brain, I shall now recapitulate such of them as are the surest signs by which we may distinguish this disease from others, which so much resemble it, as sometimes to deceive even the most experienced physicians. Whytt has informed us, it may be distinguished from worms, by attending to what he has called the following characteristic marks. In the Hydrocephalus, he says, the feverish heat is not abated when the pulse becomes slow and irregular, whereas, when it beats in this manner, in children who have worms, no fever attends. Dr. Whytt has been very unfortunate in this particular, for so seldom do worms produce a real disease, that it is doubted by many, whether there is such a thing as a genuine worm-fever: the disease which is called a worm-fever, is now known to be a simple remittant, with a preternatural determination to the head, which produces death, by an effusion of water in the brain\*. A slow irregular pulse, often attends in persons of a delicate make, when afflicted with violent nervous head-ach, but it is attended with a cool skin, whereas in the dropsy of

\* Vide some valuable observations, on the infantile remitting fever, by Dr. Butter.

the brain, the feverish heat is excessive\*. By attending then to this one symptom, we may easily distinguish it from a nervous affection of the head.

It is difficult to discover the hydrocephalus in its first stage. But when we meet with a patient under fifteen or sixteen years of age, seized with a slow fever of no certain type, and irregular in its accessions and remissions; when in that state of fever the patients vomit once a day, or once in two or three days; when they shun the light, and complain of a pain in the crown of their head, or over their eyes, after the fever has continued for some time. When these complaints neither yield much to repeated vomits, gentle cathartics, nor blisters, there is reason to suspect water in the ventricles of the brain. But as worms, and other disorders of the stomach and intestines, are sometimes attended with most of these, as well as other symptoms that accompany the internal hydrocephalus in its first stage, we are often at a loss to find out this disease, till it arrives at its second period, when the pulse begins to grow nearly as slow, or even slower than natural, but irregular; for this change of the pulse, added to the

\* If we judge of the heat of the body in this disease, by feeling the hands and the wrists, we shall be often deceived; for when these are exposed to the air, they become rather cold, while such parts as are well covered have a feverish heat.



symptoms of the first stage, is, as I have before observed, almost an infallible sign of water in the brain, if at the same time the patient is not relieved, and the feverish heat does not abate with the quickness of the pulse.

When we meet with a slow and irregular pulse, with thirst and a feverish heat, watching, a strabismus, or double sight, a delirium, and screaming, succeeding the symptoms mentioned in the first stage, we may strongly suspect the effect of the first stage, viz. an effusion of water in the ventricles of the brain. But this is still more evident, when soon after the patient grows comatose, the pupil dilates and loses its motion, the pulse becomes quick, the cheeks are flushed, the tendons start, and convulsions follow.

Some of these symptoms occasionally occur towards the close of other states of fever, in which, from the brain being much affected, the patient falls into a coma before his death. But the cephalic state of fever, of which I am treating, is easily distinguished from others, by attending to the whole progress of the disease, and particularly to the pulse, which, after having been at first quick, becomes slow and irregular; and lastly acquires a greater frequency than ever, for the

screaming, squinting, and dilatation of the pupil, rarely occur in other fevers.

It appears from the few histories of the hydrocephalus, that we can depend upon no one symptom which can be considered as characteristic. Therefore we should like faithful centinels, be continually upon our guard, and always suspect its approach. As two thirds of the diseases which inflict the human race, terminate in effusion in some part of the body, I would whenever there is a severe head-ach, accompanied with an affection of the stomach, slow or irregular pulse, always suspect a tendency to dropsy of the brain.

## EXPLICATION OF SOME OF THE SYMPTOMS.

In general, the whole symptoms of this disease proceed from the same cause, acting on different degrees of excitability, viz. the inflammation and destention of the blood-vessels of the brain, occasioning pressure on that viscus.

1st. Of the full tense and frequent pulse in the first stage.

In every case where the full tense and frequent pulse occurs, I believe there is inflammation and distention.

We know that inflammation and distention of a particular part, will increase the action of the heart and arteries, provided the stimulus be only in proportion to its excitability. But if there be an excess of stimulus to the excitability of the part, not only a slowness but depression also will be the consequence. As we see in wounds of the head, the pulse will be depressed in proportion to the pressure on the brain.

2nd. The slow irregular and intermitting pulse in the second stage.

This state of the pulse, I would explain as above. And only observe that it would continue in this state until the stimulus was either removed or the excitement reduced below the excitability: The accustomed stimulus then acting on this excitability would encrease the pulse in frequency; which points out the third stage together with an explanation.

This explanation of the different states of the pulse in Hydrocephalus, I trust will be received satisfactorily, when we see its analogies to the dif-

ferent states of the pulse from opium \*. 1st. If we give a few grains of opium we see the pulse increase in fullness, frequency, and tension. 2nd. If a few more grains, we see it tense and intermitting. 3d. And if a few more we see it completely depressed. Nothing more takes place here, than does in the hydrocephalus. But probably it will here be said that opium is a different stimulus from the causes which induce the disease. But it will be remembered that stimulus is equally an unit, a heat.

In apoplexy, the pulse, though at first slow, becomes very quick towards its close, and indeed, in almost every disease, the pulse is uncommonly quick before death, not owing to the nerves of the heart being then more sensible, or fitter for performing their office, than they were before, but because at that time, there is an uncommon struggle in the body, and all its powers are excited into action by the great irritation of the brain and nervous system. The same seems to be the case in those who are dying of the dropsy in the brain; for how much soever the medullary part of the brain may be compressed, yet the convulsions which happen in the last stage, show that the brain

\* No one will deny opium a specific operation on the brain. And few, I hope, (of the moderns) will deny its action on the heart and arteries through the medium of or primarily on the brain.

and nerves are sensible of irritation, and still retain their power of putting the muscles in motion.

## OF THE DILATATION OF THE PUPIL.

The contraction of the pupil is owing to the uneasy sensation excited in the retina by too much light; and hence it is, that in a dark place, or when the retina becomes insensible of the stimulus of light, the pupil is always observed to be dilated. In the hydrocephalus, when the water in the ventricles presses so much on the thalami nervorum opticorum as to render the optic nerves in a great measure insensible, the retina will no longer feel the impression of light; and therefore the pupil will not contract.

The aversion to light, proceeds from an increased sensibility of the retina.

The loss of appetite and vomiting are owing to the disordered state of the brain, between which and the stomach there is so great a sympathy, that in wounds of the head, where the brain is injured, a vomiting is almost a constant symptom.

## OF THE PROGNOSIS.

I shall only observe, that when the dilatation of the pupils of the eyes increases, a strabismus or delirium takes place, subsultus tendinum, or convulsions happen, the disease is generally fatal, although cases are recorded, in which the patients have recovered, even after these most alarming symptoms had taken place.

The causes which induce this disease, act either directly on the brain, or indirectly upon it, through the medium of the whole system.

1st. The exciting causes which act directly on the brain, are falls or bruises upon the head, certain positions of the body (especially if plethoric) which bring on congestion or inflammation, and afterwards an effusion of water in the brain.

2nd. The remote or indirect causes of this disease are numerous. The following diseases of the whole system appear to act indirectly in producing an internal dropsy of the brain. Worms, intermitting, remitting, continual and typhus fevers, rheumatism, pulmonary consumption, eruptive fevers, the cholic, palsy, melanco-



ly, dysentery, dentition, insolation, scrophula, and the sudden healing of old sores. I believe the former of those causes to be the most common, owing to the great sympathy existing between the head and alimentary canal; since by removing the worms in the *first* stage, the patient will be relieved.

3d. Of the predisposing causes most authors have observed their patients previous to their illness, to be extremely lively, of acute understandings, of a delicate make, and in many of them a transparency of the skin, the eyes full, prominent, and brilliant; and in some a scrophulus taint has been suspected.

## OF THE PROXIMATE CAUSE.

From the facts enumerated in the preceding pages, we may consider the hydrocephalus as arising altogether from an inflammation of the brain. The following circumstances seem to confirm this opinion.

1st. The disease affects robust and healthy children, in preference to the weak and delicate.

2nd. The pulse in the beginning of the disease is full and tense, which, if there had been no other proof of its inflammatory nature, was sufficient to have led the numerous authors on this disease to a steady and uniform method of cure. But this, like many other of the most important discoveries in medicine, has been reserved for the Luminary of the western world. With those facts he has advanced a theory, which completely explains the various phenomena of the disease; so that there seems to be wanting nothing further upon the subject. To give it support by some additional arguments, and by those which have already been adduced, presented in a different view, is the leading object of this dissertation.

3dly. Delirium, difficulty of breathing, aversion to light, are all symptoms of inflammatory diseases.

4thly. It affects children more than adults, for they are more subject to inflammatory complaints; as excitability abounds in infancy.

5thly. Upon opening the cranium after death, the blood-vessels are found turgid with blood; and there is every appearance of inflammation of the brain. Dr. Quin has related a case directly in point. The head of a patient was opened, who



died with every symptom of hydrocephalus, and no water was found in the ventricles; the vessels were all turgid with blood, and no anatomist could have injected them more nicely. This case cannot, I acknowledge, be properly called a dropsy of the brain, although every symptom of this complaint was present. Phrenicula, an appellation which Dr. Rush has lately given to the hydrocephalus, and which, at a future day, will perhaps be generally adopted, would have been more proper. It should likewise be remembered, that a physician is governed by the symptoms and not by the name of a disease. Prescribing for the mere name of a disease, has made as much havoc among mankind, as the yellow-fever, plague, famine, or the sword.

6thly. Fothergill and Warren have told us, it is fatal in a shorter time, in vigorous and healthy constitutions, than in the delicate and weakly.

### METHOD OF CURE.

The generality of authors appear to be decidedly of opinion, that the disease is owing to an original laxity, or weakness in the brain, whereby the small exhalant arteries of the ventricles will throw out the lymph in greater quantities than

the absorbent veins can imbibe it. And the remedies which have been ushered into practice, prove, that while they have flattered in prospect, they have almost universally disappointed in application; accordingly, their writings abound with recommendations of remedies to answer this hypothetical theory, which rather serve to shew the credulity of their authors, than furnish us with proper means of combating the dreadful consequences which follow.

It is not necessary to notice the emperical prescriptions they have been accredited, but are fast entombing with their authors.

I shall pass over unnoticed, the various treatments contained in the early records upon this subject. They are dictated (as I hope I have satisfactorily proved) by false theory, and are not only erroneous, but often absurd and ridiculous. Indeed to detail the progress of opinion, or recount the modes of cure which have prevailed, would be to repeat the history of perpetuated error, and the melancholy record of the uncertainty of medical science.

Having, I trust, already proved, the Hydrocephalus internus, to be an inflammatory state of fever, I shall not here renew the inquiry, but pro-

ceed to the immediate detail of the *modus medendi*, derived from the theory I have embraced.

From the vehemence of the attack, and the impetuous progress of the disease, remedies the most prompt and decisive in their operation, should be employed. None can answer this view so effectually, as blood-letting, it acts more directly and expeditiously, than any other mode of depletion. The failure and (supposed) impropriety of this practice, appears to have been from the limited and insufficient bleedings. At the very time when this practice was abandoned, the indications, most vehemently and clamorously, demanded the profuse repetition of the lancet. To be effectual it should be employed from six to above an hundred ounces, according to the age of the patient. The practice should not be employed, if limited; for it only augments the force of the disease, by removing, in part, the cause which depresses the system. This effect I have often remarked in the treatment of the yellow-fever. The state of the pulse, and the apparent degree of debility, ought not to deter from this copious depletion, as it is called for, by other circumstances. They are states highly insidious, and may be explained by referring them, either to an engorgement of the vessels, or to a general prostration of the system from the violence of the

impression. In either case, the practice is equally indicated. It acts powerfully in producing absorption. Frequently when the eyes are suffused with blood, or bile, a sudden absorption will take place immediately after the use of the lancet. For proofs that venesection has frequently cured dropsies in other parts of the body, I refer to a variety of facts, recorded by Monroe, Hewson, Rush, and other authorities.

The use of the lancet in this disease, is not only recommended by its analogy with other fevers, but is enforced by the pulse, the symptoms, the appearances upon dissection, and the following instances of its successful employment, assisted by other depleting remedies.

Dr. Rush has been uniformly successful by blood-letting, since he has adopted the present theory\*. I have lately witnessed its efficacy in co-operation with blisters and other depleting remedies in the cases of two young ladies, one of whom lost one hundred and thirty ounces of blood.

A friend has favoured me with the case of a young woman 18 or 19 years of age, whom he

\* Vide Rush, Med.Inq. & Obs. vol. ii. page 217

cured by Phlebotomy. Blisters, cathartics, digitalis, and a salivation.

Drs. Dobson and Percival were so successful, as to lead many to believe, that mercury was a specific in this disease\*.

The records of medicine contain many cases of this disease having been completely cured, by the use of this celebrated medicine†.

I shall close my remarks on this disease, by recommending other remedies as auxiliaries to bleeding. Some advantage may doubtless be derived from the various other modes of depletion.

1st. Of Cathartics.—This class of medicines is generally allowed to promote absorption. Considered as such, they must be regarded as useful remedies‡. They act, not only by discharg-

\* Vide Lond. Med. Obs. & Inq. vol. vi. page 148. Manchester Memoirs, vol. iii. page 213.

† Vide a paper by Dr. Dobson, in the Lond. Medical Obs. & Inq. vol. vii. page 48. One by Dr. Hunter, vol. vi. page 52. One by Dr. Campbell, in Med. Comment. vol. ix. page 240. One by Dr. Eason, vol. viii. page 325. and several by Dr. Lettsom, in the Memoirs of the Lond. Med. Soc. vol. i. page 273.

‡ Vide Whytt, page 745.

ing acrid fæces from the bowels, but also, by inviting the excitement from the blood-vessels, and consequently reducing the fever.

2nd. Blisters\* have been uniformly recommended by all practical writers upon this subject. They have been applied to the head, neck, and temples, and generally with obvious relief to the pain in the head. They should be omitted in no stage of the disease; says Dr. Rush, “for even in the inflammatory stage, the discharge they occasion from the vessels of the head, greatly overbalances their stimulating effects upon the whole system.”

3d. Clothes wetted with cold vinegar or water, and ice applied to the head, contribute very much to relieve the pain in the head. Dr. Withering used this application with the happiest success.

In this case cold acts, by carrying of the heat, from, and lessening the determination of blood, to the part affected.

A puncture in the brain has been proposed by some writers to discharge the water from its ven-

\* Whytt, page 145. Fothergill, oct. edit. vol. ii. page 73 and 74. Paterson, page 31. Rush Medical Inq. vol. ii. page 226.



ticles. If the theory I have delivered be true, the operation promises nothing, even though it could always be performed with perfect safety. In case of local injuries, or of inflammation from any cause, it must necessarily increase the disease. It has been tried, but the patients have uniformly died. Le Catt and Remet\* evacuated the water of several hydrocephatic patients, at different times, but the consequence in every instance was death.

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In taking leave of the University, I cannot but acknowledge my obligations to Drs. Shippen, Wistar, Barton and Physic, whose characters both as men and physicians, entitle them to the highest respect, and whose favours I hope I shall justly appreciate, whilst gratitude remains to be a virtue.

\* Vide Le Catt. *Philos. Frans.* for 1751, and *Mid. Commen.* vol. vi. page 422. Monroe on the Dropsy, page 161.





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